

THE INSECT PEST SURVEY  
BULLETIN

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BUREAU OF  
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# INSECT PEST SURVEY BULLETIN

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## STATUS OF THE EUROPEAN CORN BORER IN 1940

A. M. Vance, Entomologist  
Bureau of Entomology and Plant Quarantine  
United States Department of Agriculture<sup>1/</sup>

### Distribution

In 1940 the European corn borer was found for the first time in the following counties of States previously infested: Champaign, De Kalb, Ford, Grundy, Iroquois, Kane, Kendall, Livingston, McHenry, McLean, Vermilion, and Winnebago, in Illinois; Harford in Maryland; Brown in Ohio; Essex, Isle of Wight, James City, and New Kent, in Virginia; and Columbia, Portage, Walworth, and Waushara, in Wisconsin.

<sup>1/</sup> Information presented in this report was accumulated by the Bureau of Entomology and Plant Quarantine and by workers in the various States infested by the European corn borer (Pyrausta nubilalis Hbn.). The data were assembled and tabulated at the laboratory for European corn borer research, Toledo, Ohio, with W. A. Baker in charge. In 1940 the survey was conducted in 35 counties in Indiana by the State Conservation Department; in 14 counties in Maine, in 17 counties of New Jersey, and in 10 counties of Vermont, by the State departments of agriculture of those States; in 7 counties of eastern New York, including Long Island, by the New York Agricultural Experiment Station, Geneva, N. Y.; and in 7 counties of New Hampshire by the New Hampshire Agricultural Experiment Station. The agricultural experiment stations of Delaware and Maryland aided the Bureau in the survey in these two States. New county records of the European corn borer in 1940 were contributed by the Natural History Survey and State department of agriculture of Illinois, by the State departments of agriculture of Virginia and Wisconsin, and by the agricultural experiment station of Maryland. The Bureau of Entomology and Plant Quarantine appreciates the interest and cooperation of all States in which the survey was conducted and from which records of distribution were obtained in 1940.

## Fall Abundance

The Bureau of Entomology and Plant Quarantine cooperated with interested States again in the fall of 1940 in a survey to determine the relative abundance of the European corn borer in corn over a considerable portion of the area infested by the insect. As a result, 3,273 cornfields were examined in 258 counties of 19 infested States, 168 of the counties being surveyed by the Bureau and 90 by the States. In each of 5 States, 2 small counties were combined and each pair treated as a single county, and in 1 State 3 small counties were grouped in this way. The survey procedure adopted in 1939 was followed in 1940 in all States except Indiana and Maine. By this method, 10 cornfields at random were sampled within each county (except in Delaware where 20 fields per county were surveyed), the count of infestation being obtained by examining 25 consecutive corn plants taken at a given distance within the field from near the mid point of its most accessible edge, and the number of borers per infested plant being determined by dissecting the first 2 plants found infested. In Indiana and Maine an average of 20 to 25 fields were surveyed in each county and the population figure for each field was based on an examination of 100 plants and the dissection of 5 or 10 infested plants. In either procedure the product of the percentage of plant infestation in a field and the average number of borers per infested plant provided a figure designated as the average number of borers per 100 plants. The population data derived in this way for the individual fields were then grouped in the calculation of county averages.

A summary by States of the data on corn borer abundance for all counties surveyed in 1940 is presented in table 1, with comparisons of the figures for 1939 and 1940 limited to the number of comparable counties included both years. In table 2 the average numbers of borers per 100 plants are given for each county surveyed in 1940 and all possible comparisons are made with similar data from 1939. Both States and counties are arranged alphabetically in the presentation of the data. In reading the tabulated data it should be noted that a zero recorded for any county indicates a population so low that no infested plants occurred within the specified counts and does not mean the complete absence of the borer. In the accompanying map shaded areas indicate the relative abundance of the European corn borer over the part of the infested area in the United States surveyed in 1940, and give the known distribution of the insect in 1940 on a county basis. Many of the unshaded counties within the border of infestation were surveyed in 1939 and, in general, found only lightly infested by the corn borer.<sup>2/</sup> In the following paragraphs some of the outstanding results of the 1940 survey are discussed briefly.

The principal centers of abundance of the European corn borer in the United States in 1940 were as follows: Southeastern Michigan, including most of the "thumb" section; the northwestern quarter of Ohio; nine counties near the eastern border of Indiana; four counties on the southern edge of Lake Ontario,

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<sup>2/</sup> Insect Pest Survey Bul., Sup. to No. 9, v. 19: pp. 603-618. Dec. 15, 1939.



in western New York; portions of the Hudson River Valley in eastern New York; Long Island, New York; Centre and Bucks Counties, in Pennsylvania; two counties in southern Vermont and one in southwestern New Hampshire; eastern Massachusetts and Hampden County, in that State; the States of Connecticut and Rhode Island; the central part of New Jersey; southern Delaware; most of the Eastern Shores of Maryland and Virginia; Princess Anne County, on the southeastern mainland of Virginia.

The highest infestations per county in 1940 occurred in Nassau County, Long Island, N. Y., and Niagara County, N. Y., which averaged 742.2 and 709.6 borers per 100 plants, respectively. Other relatively high populations--501 to 700 borers per 100 plants--were found in Gratiot and Sanilac Counties, Mich.; Columbia and Orleans Counties, N. Y.; Fairfield County, Conn.; Burlington County, N. J.; and Accomac and Princess Anne Counties, Va.

The data show significant increases in abundance of the European corn borer in 1940 from 1939 in comparable surveyed sections of Indiana, Ohio, western New York, Long Island, N. Y., New Jersey, Delaware, Maryland, and Virginia; significant decreases in Vermont, Massachusetts, Connecticut, and Rhode Island; and no significant changes in the levels of population in Wisconsin, Michigan, Bucks County, Pa., eastern New York, New Hampshire, nor Maine. Infestation in the few counties surveyed in southeastern Wisconsin in 1940 was light, as in 1939, whereas in southeastern Michigan larval populations continued at high levels. The increases in abundance of the insect from 1939 to 1940 in the surveyed portions of Indiana and Ohio brought the populations in these States to the highest levels on record, and in the four counties surveyed along the southern edge of Lake Ontario, in western New York, the borer reached its maximum abundance for that section of the country. Although less abundant throughout New England and in eastern New York proper in 1940 than in 1939, the corn borer became much more numerous southward along the Atlantic coast from Long Island through New Jersey, Delaware, Maryland, and Virginia.

Wisconsin and Illinois.--Only a light infestation of the European corn borer--5.3 larvae per 100 plants--was found during a survey in 1940 of 6 counties in the southeastern corner of Wisconsin, indicating little change in abundance from the average of 3.3 borers per 100 plants noted in the same counties in 1939. A survey in 1940 of the 5 counties in northeastern Illinois, in which the corn borer was first recorded in 1939, showed that populations of the insect in that section were too sparse for measurement by the method employed.

Kentucky.--Four counties along the Ohio River, in northeastern Kentucky, on record as infested by the European corn borer, were surveyed in 1940. No infestation was found in 2 of the counties and only a trace of the insect in the other 2. The result was an average of only 0.3 borer per 100 plants for the 4 counties as a group.

Indiana.--The European corn borer in Indiana has steadily increased in numbers from 1938 to 1940. Within a section of 35 counties in the State, which has been intensively surveyed each year, the average number of borers per 100 plants more than doubled from 14.9 in 1938 to 34.1 in 1939, and again increased in about the same proportion, from 34.1 in 1939 to 77.4 in 1940. Significant

increases from 1939 to 1940 took place in 26 of the 35 counties surveyed in the 2 years, and the population trend in 8 other counties was in the direction of an increase. In 1940 populations averaged over 100 borers per 100 plants in each of 9 counties in the eastern part of the State, as compared with 5 counties in this category in 1939. The greatest abundance of the corn borer in Indiana in 1940 was found in Wells County, where there were 343.6 larvae per 100 plants; the 4 next most heavily infested counties--Blackford, Jay, Adams, and Allen--had populations per 100 plants of 263.8, 252.6, 246.4, and 234.5, respectively. One of the most important increases from 1939 to 1940 appeared in Wayne County, in the southeastern part of the State, where the average number of borers per 100 plants increased from 3.1 in 1939 to 101.7 in 1940.

Ohio.--In a section of northwestern Ohio, comprising 31 counties, the corn borer increased significantly in numbers from an average of 103.5 larvae per 100 plants in 1939 to 227 in 1940. Thirteen counties in the section showed significant increases in borer abundance from 1939 to 1940, while all but 1 of the remaining 18 counties displayed a trend toward increase in the same period. Populations were much higher in 1940 than in 1939 in a number of counties. Van Wert and Hancock Counties in 1940 had the highest averages found to date in Ohio--453 and 427.6 borers per 100 plants, respectively, while Paulding, Putnam, Hardin, Auglaize, Fulton, and Wyandot had populations per 100 plants averaging 393.6, 391.2, 379, 367.6, 350.4, and 309.6, respectively. In other words, 8 of the 31 comparable counties, or 25.8 percent, averaged more than 301 borers per 100 plants in 1940. Only 1 county out of the same group was infested to that extent in 1939. Ten other Ohio counties in 1940 each averaged 201 to 300 borers per 100 plants, and 6 more had populations of 101 to 200 larvae per 100 plants. In 1939, 45.2 percent of the 31 comparable counties averaged more than 101 borers per 100 plants, whereas in 1940 the percentage of counties with populations of this size was 77.4. Infestation by the borer in 8 counties in the southwestern corner and 4 in the southeastern part of the State, surveyed in 1940 only, was relatively light.

Michigan.--Within a section composed of 20 counties in southeastern Michigan, there was an average of 244.1 larvae of the European corn borer per 100 plants in 1940, as compared with 210.5 in 1939. Significant increases from 1939 to 1940 occurred in the counties of Sanilac, Macomb, Saginaw, and Livingston, while pronounced decreases were noticeable only in Ingham and Washtenaw Counties. High populations continued to be chronic in the northern portion of the "thumb," where each of 10 counties averaged more than 200, and each of 7 more than 300 borers per 100 plants in 1940, including Gratiot and Sanilac Counties with maximums for the section of 516.2 and 512 borers per 100 plants, respectively. The last 2 counties mentioned were the most heavily infested of any surveyed in 1940 in the Michigan-Ohio-Indiana area. Five other counties surveyed in Michigan in 1940 had 101 to 290 borers per 100 plants, while the remaining 5, all in the southwestern part of the section surveyed, averaged less than 73 borers per 100 plants.

Pennsylvania.--With the exception of observations in Bucks County on the southeastern border of Pennsylvania, the 1940 survey was confined to the western half of the State and to counties from most of which no data on corn borer abundance had been obtained for some years. In 30 such counties surveyed in



western Pennsylvania in 1940, the infestation was very light, no borers being found in half of them and less than 17 larvae per 100 plants in each of the other 15. In Centre County, in the center of the State, there was an average of 112.8 borers per 100 plants in 1940, and in Bucks County the average of 117 borers per 100 plants in 1940 had about the same significance as that of 142 found there in 1939. Corn borer surveys in 1939 and 1940 together covered all of Pennsylvania except a section of 10 counties in the southeastern part of the State, not yet known to be infested, and 4 neighboring counties first found infested in 1939. Sizable infestations in the 1939 and 1940 surveys in Pennsylvania were found only in Centre and Bucks Counties.

West Virginia.--Measurable populations of the corn borer were not found in any of the 10 infested counties in the northwestern corner of West Virginia, surveyed for the first time in 1940.

New York.--The corn borer was much more abundant in 1940 than in 1939 in the counties of Niagara, Orleans, Monroe, and Wayne, all located along the southern shore of Lake Ontario in western New York. There populations of the insect were higher in 1940 than in any other year on record, the average number of borers per 100 plants in this group of 4 counties having increased from 101 in 1939 to 510.2 in 1940. In Niagara County the borer populations per 100 plants averaged 709.6. On Long Island (Nassau and Suffolk Counties) there was also an increase in abundance of the borer--from 221.5 larvae per 100 plants in 1939 to 493 in 1940--being most pronounced at the western end of the island, in Nassau County, which had the maximum infestation in the country in 1940 of 742.2 borers per 100 plants, as an average for the entire county. Taken as a whole, the 9 counties surveyed in the Hudson River Valley, in eastern New York, in both 1939 and 1940 showed little change in these 2 years. An infestation of 3,850 borers per 100 plants in 1 cornfield in Columbia County in 1940 raised considerably the year's average for that county. Greene County also tended to have more borers in 1940 than in 1939. Lower populations were found in Albany County in 1940 than in 1939 and a trend toward decrease from 1939 to 1940 was apparent in Orange, Rensselaer, Saratoga, and Schenectady Counties.

New England.--In New England populations of the European corn borer declined from 1939 to 1940, the average for the 6 States of 228.1 borers per 100 plants in 1939 dropping to 111.5 in 1940. The infestation in Maine was light in 1940, averaging 2.2 borers per 100 plants, as compared with 10.2 in 1939. In New Hampshire there was a downward trend in abundance of the insect, from 51.4 borers per 100 plants in 1939 to 34 in 1940, and significant decreases from 1939 to 1940 occurred in Vermont, Massachusetts, Rhode Island, and Connecticut. In Vermont the decrease was from 66.2 borers per 100 plants to 39.6; in Massachusetts from 496.2 to 159.1; in Rhode Island from 664.1 to 264.6; and in Connecticut from 471 to 348.4. With the exception of Bennington and Windham Counties, Vt., Sullivan County, N. H., and Hampden County, Mass., county populations of the borer exceeding 100 larvae per 100 plants were confined to the States of Connecticut and Rhode Island and to 6 counties along the coast in eastern Massachusetts. Fairfield County in Connecticut had the heaviest infestation, with 539.6 borers per 100 plants, while 3 other Connecticut Counties--Middlesex, Hartford, and New Haven--averaged 472.2, 448.4, and 393.4 borers per 100 plants, respectively. The only other county in New England with an average of more than 300 borers per 100 plants was Barnstable, in Massachusetts, with 334.

New Jersey.--The European corn borer increased appreciably in abundance in the State of New Jersey, from an average of 70.1 borers per 100 plants in 1939 to 109 in 1940, although many of the individual counties showed little significant change in the general level of their populations in the 2 years. The increase was somewhat more pronounced in the southern than in the northern half of New Jersey. Burlington and Monmouth Counties, near the center of the State, with 505.4 and 387.4 borers per 100 plants, respectively; had the highest populations of the insect in New Jersey in 1940; in 1939 these 2 counties averaged 220.8 and 98.6 borers per 100 plants, respectively. Bergen County had 234 borers per 100 plants in 1940 and 4 other counties averaged 101 to 200 borers per 100 plants. The remaining 12 counties in the State together averaged 37.1 borers per 100 plants in 1940.

Delaware, Maryland, and Virginia.--Striking increases in numbers of the corn borer from 1939 were found in 1940 in Delaware and on the Eastern Shores of Maryland and Virginia. The average number of borers per 100 plants in Delaware in 1940 was 53.2, as compared with 8.9 in 1939; in the combined counties of Somerset, Wicomico, and Worcester, in Maryland, the 1939-to-1940 increase was from 5.8 to 235.3 borers per 100 plants; and in Accomac and Northampton Counties, in Virginia, the change was from 41.4 borers per 100 plants in 1939 to 512.9 in 1940. Some of the highest populations of the European corn borer known in the United States were observed in 1940 in Princess Anne County, on the mainland of Virginia, where the average number of borers per 100 plants, as determined by the survey, was 601.2. Individual corn plants in some fields in this county contained more than 100 corn borer larvae.

#### Summer Abundance in Sweet Corn

In the summer of 1940, surveys were conducted in several counties of Connecticut, Maine, New Jersey, New York, and Ohio, to determine the relative abundance of the European corn borer in early market sweet corn.<sup>3/</sup> The fields surveyed represented the most heavily infested ones within a given locality. In each field 100 plants were examined for percentage of plant infestation and 10 infested plants were dissected, whenever possible, to learn the average number of borers per infested plant, the product of the 2 figures giving the average number of borers per 100 plants. The data on sweet corn are presented in table 3.

The corn borer was only half as abundant in early market sweet corn in 1940 as in 1939, according to an average of the data from all 14 counties surveyed. In New Haven County, Conn., the unusually high average of 1,980 borers per 100 plants in 1939 declined to 493 in 1940, and in Lucas County, Ohio, there were 497 borers per 100 plants in 1940, as compared with 817 in 1939. A trend toward increase appeared in Burlington County, N. J., where the average number of borers per 100 plants changed from 417 in 1939 to 510 in 1940. In most of the counties surveyed in eastern New York, including Nassau and Suffolk on Long Island, populations of the borer in sweet corn were lower in 1940 than in 1939, with maximums of 509 and 425 larvae per 100 plants occurring in Albany and Columbia Counties, respectively. Fewer borers were also found in this crop in 1940 than in 1939 in comparable counties surveyed in Maine.

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<sup>3/</sup> The survey of sweet corn in New York was made in cooperation with the Agricultural Experiment Station, Geneva, N. Y., and the data on infestation in this crop in Maine were kindly furnished by the State department of agriculture.



Table 1.--Data on European corn borer abundance in corn, fall of 1940, and comparisons with data for 1939, summary by States

State	1940		Comparable counties	Average borers per 100 plants	
	Counties	per 100 plants		1939	1940
	Number	Number		Number	Number
Connecticut----	8	348.4	8	471.0	348.4
Delaware-----	3	53.2	3	8.9	53.2
Illinois-----	5	0	0	--	--
Indiana-----	35	77.4	35	34.1	77.4
Kentucky-----	4	0.3	0	--	--
Maine-----	14	2.2	13	10.2	2.2
Maryland-----	3	235.3	3	5.8	235.3
Massachusetts--	10	159.1	10	496.2	159.1
Michigan-----	20	244.1	20	210.5	244.1
New Hampshire--	9	34.0	9	51.4	34.0
New Jersey----	19	109.0	19	70.1	109.0
New York-----	16	253.8	15	131.3	263.0
Ohio-----	43	165.2	31	103.5	227.0
Pennsylvania--	32	9.1	1	142.0	117.0
Rhode Island--	4	264.6	4	664.1	264.6
Vermont-----	12	39.6	12	66.2	39.6
Virginia-----	5	329.5	2	41.4	512.9
West Virginia--	10	0	0	--	--
Wisconsin-----	6	5.3	6	3.3	5.3
Total	258	--	191	--	--
Areal average	--	115.9	--	130.8	151.5

Table 2.--Data on European corn borer abundance in corn, fall of 1940, and comparisons with data for 1939

State and county	:Average borers: :per 100 plants:		State and county	:Average borers :per 100 plants	
	:1939	:1940:		:1939	:1940
	:Number	:Number		:Number	:Number
Connecticut:	:	:	Indiana (Cont'd.):	:	:
Fairfield-----	: 321.4	: 539.6:	Fayette-----	: 3.2	: 16.5
Hartford-----	: 520.4	: 448.4:	Fulton-----	: 1.5	: 17.3
Litchfield-----	: 300.2	: 213.8:	Grant-----	: 25.4	: 75.5
Middlesex-----	: 425.4	: 472.2:	Hamilton-----	: 4.9	: 10.6
New Haven-----	: 503.2	: 393.4:	Hancock-----	: 3.5	: 10.5
New London-----	: 807.2	: 256.8:	Henry-----	: 7.5	: 20.6
Tolland-----	: 366.8	: 277.6:	Howard-----	: 15.4	: 35.3
Windham-----	: 523.0	: 185.6:	Huntington-----	: 51.0	: 173.1
	:	:	Jay-----	: 127.7	: 252.6
Average, 8 counties-----	: 471.0	: 348.4:	Kosciusko-----	: 5.3	: 44.4
	:	:	Lagrange-----	: 6.8	: 28.5
	:	:	La Porte-----	: 0.8	: 1.4
Delaware:	:	:	Madison-----	: 11.4	: 38.7
Kent-----	: 11.2	: 29.8:	Marshall-----	: 1.1	: 17.5
New Castle-----	: 4.0	: 25.2:	Miami-----	: 14.3	: 21.2
Sussex-----	: 11.4	: 104.7:	Noble-----	: 38.5	: 82.9
	:	:	Porter-----	: 0.04	: 0.4
Average, 3 counties-----	: 8.9	: 53.2:	Randolph-----	: 38.0	: 30.9
	:	:	Rush-----	: 7.1	: 21.0
	:	:	St. Joseph-----	: 1.3	: 3.8
Illinois:	:	:	Shelby-----	: 2.2	: 11.4
Cook-----	: --	: 0	Starke-----	: 0.3	: 0.6
Du Page-----	: --	: 0	Steuben-----	: 44.4	: 155.8
Kankakee-----	: --	: 0	Tipton-----	: 9.3	: 57.9
Lake-----	: --	: 0	Union-----	: 5.0	: 9.2
Will-----	: --	: 0	Wabash-----	: 32.4	: 53.8
	:	:	Wayne-----	: 3.1	: 101.7
Average, 5 counties-----	: --	: 0	Wells-----	: 151.2	: 343.6
	:	:	Whitley-----	: 41.5	: 89.0
	:	:		:	:
Indiana:	:	:	Average,	:	:
Adams-----	: 177.0	: 246.4:	35 counties	: 34.1	: 77.4
Allen-----	: 147.9	: 234.5:		:	:
Blackford-----	: 106.4	: 263.8:	Kentucky:	:	:
De Kalb-----	: 90.3	: 187.0:	Bracken-----	: --	: 0.8
Delaware-----	: 16.2	: 43.6:	Campbell-----	: --	: 0
Elkhart-----	: 1.4	: 8.2:	Kenton-----	: --	: 0
	:	:	Lewis-----	: --	: 0.4
	:	:		:	:
	:	:	Average,	:	:
	:	:	4 counties--	: --	: 0.3
	:	:		:	:

Table 2.—Data on European corn borer abundance in corn, fall of 1940, and comparisons with data for 1939--Continued.

State and county		Average borers: per 100 plants		State and county		Average borers per 100 plants	
		1939	1940			1939	1940
		Number	Number			Number	Number
Maine:				Michigan:			
Androscoggin-----		0	0.5	Clinton-----		118.2	155.2
Cumberland-----		4.6	2.9	Genesee-----		447.0	399.6
Franklin-----		.9	1.6	Gratiot-----		207.8	516.2
Hancock-----		.2	0	Hillsdale-----		35.6	60.8
Kennebec-----		0	0.1	Huron-----		595.0	352.6
Knox-----		.4	.9	Ingham-----		347.0	60.2
Lincoln-----		50.6	.7	Jackson-----		29.6	33.6
Oxford-----		1.5	.1	Lapeer-----		376.2	288.2
Penobscot-----		.1	.5	Lenawee-----		118.8	130.0
Piscataquis-----		--	1.3	Livingston-----		7.8	68.6
Sagadahoc-----		.2	1.5	Macomb-----		132.8	473.4
Somerset-----		1.1	2.8	Monroe-----		240.0	166.4
Waldo-----		0	.5	Oakland-----		73.4	171.8
York-----		72.9	17.1	Saginaw-----		173.8	369.4
Average:				St. Clair-----		197.0	283.2
13 counties-----		10.2	2.2	Sanilac-----		168.0	512.0
14 counties-----		--	2.2	Shiawassee-----		242.2	230.6
				Tuscola-----		416.4	404.2
				Washtenaw-----		167.6	72.6
				Wayne-----		116.0	132.6
Maryland:				Average:			
Somerset-----		1.2	401.5	20 counties-----		210.5	244.1
Wicomico-----		4.8	45.4				
Worcester-----		11.4	259.1				
Average:							
3 counties-----		5.8	235.3	New Hampshire:			
Massachusetts:				Belknap-----		38.6	3.4
Barnstable-----		774.8	334.0	Carroll-----		21.6	13.6
Bristol-----		573.6	288.6	Cheshire-----		43.4	56.6
Essex-----		770.4	137.8	Grafton-----		4.2	13.2
Franklin-----		104.2	89.0	Hillsboro-----		103.4	24.4
Hampden-----		387.0	130.6	Merrimack-----		36.2	9.0
Hampshire-----		251.6	65.2	Rockingham-----		148.8	54.0
Middlesex-----		860.8	220.2	Strafford-----		33.8	10.0
Norfolk-----		585.0	106.2	Sullivan-----		33.0	122.2
Plymouth-----		391.0	132.2	Average:			
Worcester-----		263.4	86.8	9 counties-----		51.4	34.0
Average:							
10 counties-----		496.2	159.1				



Table 2.--Data on European corn borer abundance in corn, fall of 1940, and comparisons with data for 1939--Continued

:Average borers:			:Average borers:		
:per 100 plants:			:per 100 plants:		
:1939 : 1940:			:1939 : 1940:		
:Number: Number:			:Number: Number:		
New Jersey:			Ohio:		
Atlantic-----	22.6:	9.6:	Allen-----	154.8:	273.4
Bergen-----	292.8:	234.0:	Auglaize-----	201.4:	367.6
Burlington-----	220.8:	505.4:	Butler-----	-- :	5.6
Camden-----	61.6:	98.8:	Champaign-----	23.6:	97.8
Cape May-----	1.2:	36.2:	Clarke-----	5.8:	23.2
Cumberland-----	14.2:	58.6:	Clermont-----	-- :	.4
Essex-Union-----	147.2:	106.2:	Clinton-----	-- :	0
Gloucester-----	53.0:	101.4:	Crawford-----	12.6:	256.8
Hunterdon-----	8.0:	8.0:	Darke-----	23.2:	58.0
Mercer-----	22.6:	187.2:	Defiance-----	35.0:	96.6
Middlesex-----	211.0:	105.0:	Delaware-----	29.6:	105.4
Monmouth-----	98.6:	387.4:	Franklin-----	3.0:	86.0
Morris-----	57.6:	53.6:	Fulton-----	91.8:	350.4
Ocean-----	23.2:	34.8:	Greene-----	-- :	6.2
Passaic-----	32.9:	46.6:	Hamilton-----	-- :	8.4
Salem-----	10.8:	58.0:	Hancock-----	182.6:	427.6
Somerset-----	40.6:	4.0:	Hardin-----	131.6:	379.0
Sussex-----	6.8:	4.6:	Henry-----	120.0:	248.0
Warren-----	6.0:	31.8:	Logan-----	177.8:	276.0
Average:	:	:	Lucas-----	191.0:	253.4
19 counties-----	70.1:	109.0:	Madison-----	23.0:	76.4
	:	:	Marion-----	278.6:	247.8
	:	:	Mercer-----	77.8:	201.6
New York:	:	:	Miami-----	0.8:	22.4
Albany-----	419.4:	14.8:	Monroe-----	-- :	4.0
Columbia-----	139.8:	521.8:	Montgomery-----	-- :	15.0
Dutchess-----	87.8:	82.2:	Morgan-----	-- :	.4
Greene-----	35.8:	83.4:	Morrow-----	66.0:	293.6
Monroe-----	15.2:	297.8:	Noble-----	-- :	1.2
Nassau-----	251.8:	742.2:	Ottawa-----	65.4:	184.0
Niagara-----	227.0:	709.6:	Paulding-----	105.4:	393.6
Orange-----	79.8:	20.2:	Preble-----	-- :	20.0
Orleans-----	67.8:	577.2:	Putnam-----	211.6:	391.2
Putnam-Westchester---	-- :	116.0:	Sandusky-----	80.0:	131.2
Rensselaer-----	160.4:	54.4:	Seneca-----	35.0:	238.0
Saratoga-----	65.4:	11.8:	Shelby-----	56.0:	146.6
Schenectady-----	50.6:	8.2:	Union-----	102.6:	165.6
Suffolk-----	191.2:	243.8:	Van Wert-----	374.8:	453.0
Ulster-----	83.6:	121.2:	Warren-----	-- :	2.0
Wayne-----	94.0:	456.0:	Washington-----	-- :	2.4
Average:	:	:	Williams-----	35.6:	293.0
15 counties-----	131.3:	263.0 :	Wood-----	151.2:	189.6
16 counties-----	-- :	253.8 :	Wyandot-----	160.2:	309.6
	:	:	Average:	:	:
	:	:	31 counties-----	103.5:	227.0
	:	:	43 counties-----	-- :	165.2

Table 2.--Data on European corn borer abundance in corn, fall of 1940, and comparisons with data for 1939--Continued

State and county	Average borers:		State and county	Average borers	
	per 100 plants			per 100 plants	
	1939	1940		1939	1940
	Number	Number		Number	Number
Pennsylvania:			Rhode Island:		
Allegheny-----	---	0	Bristol-Newport----	859.6	287.4
Armstrong-----	---	4.2	Kent-----	572.8	237.0
Beaver-----	---	0	Providence-----	719.4	255.8
Bedford-----	---	0	Washington-----	504.4	278.2
Blair-----	---	6.6			
Bucks-----	142.0	117.0	Average:		
Butler-----	---	.4	4 counties-----	664.1	264.6
Cambria-----	---	7.4			
Cameron-----	---	.4	Vermont:		
Centre-----	---	112.8	Addison-----	22.2	17.0
Clarion-----	---	2.4	Bennington-----	71.4	178.4
Clearfield-----	---	1.2	Caledonia-----	6.8	2.8
Clinton-----	---	9.4	Chittenden-----	117.6	52.0
Columbia-----	---	3.2	Franklin-----	47.6	7.6
Elk-----	---	0	Grand Isle-----	106.0	20.4
Fayette-----	---	0	Lamoille-----	40.8	9.6
Forest-----	---	0	Orange-----	51.6	6.6
Greene-----	---	0	Rutland-----	61.0	48.6
Huntingdon-----	---	16.6	Washington-----	32.4	8.2
Indiana-----	---	0	Windham-----	142.8	110.2
Jefferson-----	---	4.4	Windsor-----	93.6	13.4
Juniata-----	---	0			
McKean-----	---	2.4	Average:		
Mifflin-----	---	0	12 counties-----	66.2	39.6
Montour-Northumberland	---	0			
Potter-----	---	0	Virginia:		
Snyder-----	---	0	Accomac-----	28.0	633.3
Somerset-----	---	1.6	Elizabeth City-		
Union-----	---	.4	York-----	---	13.5
Warren-----	---	2.0	Norfolk-----	---	7.2
Washington-----	---	0	Northampton-----	54.8	392.5
Westmoreland-----	---	0	Princess Anne-----	---	601.2
Average:			Average:		
1 county-----	142.0	117.0	2 counties-----	41.4	512.9
32 counties-----	---	9.1	5 counties-----	---	329.5

Table 2.--Data on European corn borer abundance in corn, fall of 1940, and comparisons with data for 1939--Continued

:Average borers:			:Average borers		
State and county	:per 100 plants:		State and county	:per 100 plants	
	:1939	: 1940:		:1939	: 1940
	:Number:	Number:		:Number	: Number
West Virginia:	:	:	Wisconsin:	:	:
Brooke-Hancock-Ohio---	-- :	0 :	Kenosha-----	0.4 :	1.2
Marion-----	-- :	0 :	Milwaukee-----	0 :	3.2
Marshall-----	-- :	0 :	Ozaukee-----	16.2 :	14.8
Mason-----	-- :	0 :	Racine-----	0 :	0
Monongalia-----	-- :	0 :	Washington-----	3.0 :	11.8
Pleasants-----	-- :	0 :	Waukesha-----	0 :	0.8
Ritchie-----	-- :	0 :		:	:
Tyler-----	-- :	0 :	Average:	:	:
Wetzel-----	-- :	0 :	6 counties---	3.3 :	5.3
Wood-----	-- :	0 :		:	:
	:	:		:	:
Average:	:	:		:	:
10 counties-----	-- :	0 :		:	:

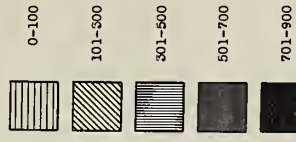
Table 3.--Data on European corn borer abundance in early market sweet corn, summers of 1939 and 1940

State and county	1939		1940	
	:Fields	:Average borers	:Fields	:Average borers
	:Number	:per 100 plants	:Number	:per 100 plants
	:Number	:Number	:Number	:Number
<u>Connecticut:</u>	:	:	:	:
New Haven-----	25 :	1,980 :	25 :	493
	:	:	:	:
<u>Maine:</u>	:	:	:	:
Androscoggin-----	19 :	10 :	25 :	16
Cumberland-----	25 :	63 :	20 :	36
York-----	25 :	125 :	25 :	33
Average-----	69 :	71 :	70 :	28
	:	:	:	:
<u>New Jersey:</u>	:	:	:	:
Burlington-----	29 :	417 :	29 :	510
	:	:	:	:
<u>New York:</u>	:	:	:	:
Albany-----	17 :	753 :	7 :	509
Columbia-----	17 :	537 :	11 :	425
Massau-----	14 :	295 :	18 :	22
Rensselaer-----	5 :	990 :	2 :	392
Saratoga-----	7 :	242 :	7 :	394
Schenectady-----	5 :	379 :	4 :	339
Suffolk-----	11 :	97 :	7 :	14
Ulster-----	14 :	1,264 :	10 :	279
Average-----	90 :	593 :	66 :	249
	:	:	:	:
<u>Ohio:</u>	:	:	:	:
Lucas-----	25 :	817 :	25 :	497

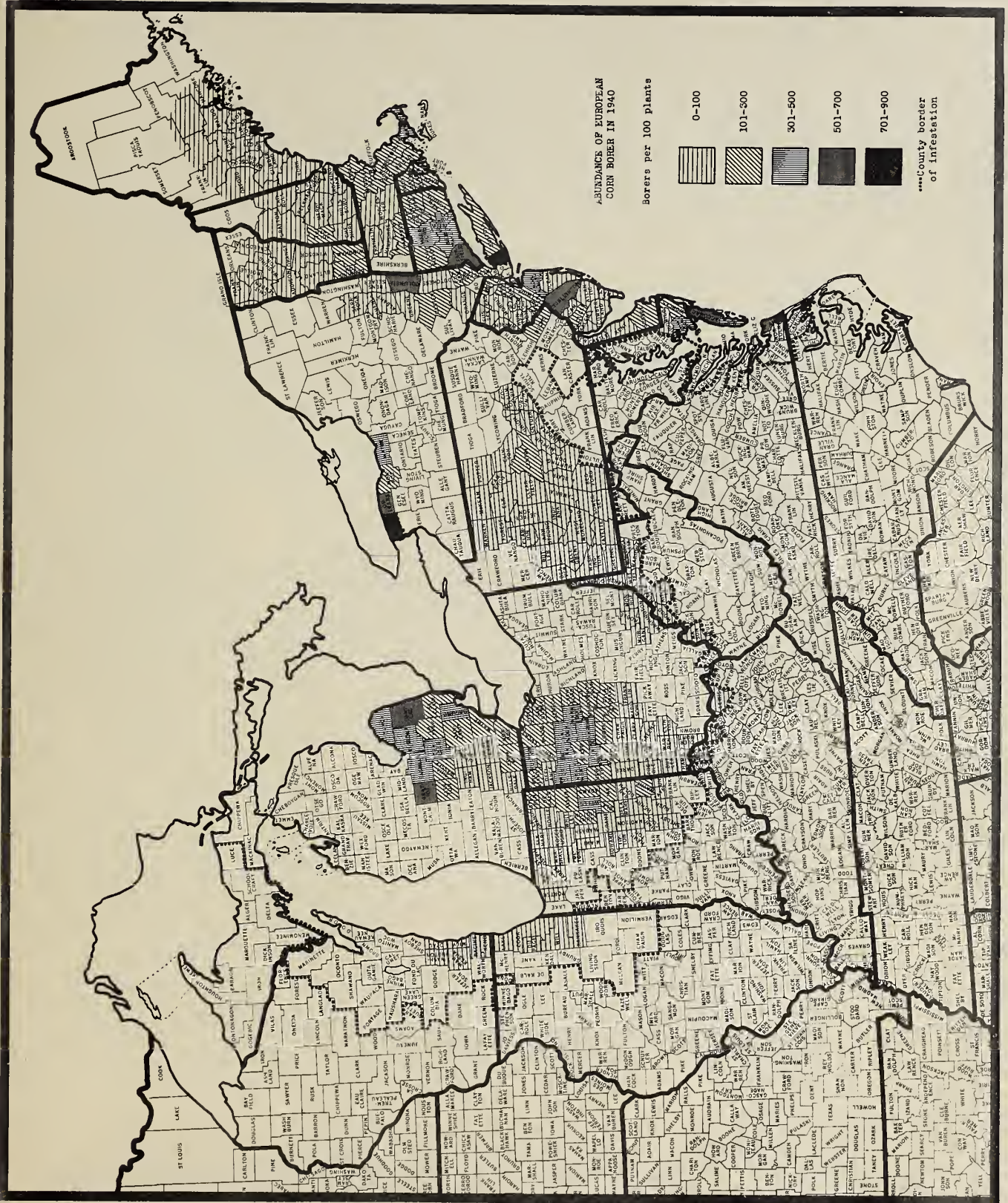


# ABUNDANCE OF EUROPEAN CORN BORER IN 1940

Borers per 100 plants



.....County border  
of infestation



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